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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,591	02/15/2002	Hajime Akimoto	500.41141X00	9409

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ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-9889

EXAMINER

NGUYEN, KEVIN M

ART UNIT PAPER NUMBER

2674

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/075,591

**Applicant(s)**

AKIMOTO ET AL.

**Examiner**

Kevin M. Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004 and 24 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-21 is/are allowed.
- 6) ☒ Claim(s) 22-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The amendment filed 5/05/2004 and the supplemental amendment filed on 05/24/2004 are entered. The rejections of claims 22-25 are maintained. Claims 1-21 are allowed as indicated in previous office action filed 12/5/2005.
2. The drawings were received on 5/05/2004. These drawings are approved.
3. The objection of claim 13 is withdrawn.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 22, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Ting (US 6,486,606).
6. As to claim 22, Ting teaches an image display device comprising  
at least one pixel including a capacitor "C" (a memory means, fig. 1),  
[recited in lines 7-8 of claim 22]  
row of driving circuits (voltage supplying means, col. 3, lines 56-58).  
[recited in lines 9-11 of claim 22]

As the transistor T2 is switched on, the OLED is driven by the capacitor C through the channel of the transistor T2 (a pixel turn-on period decision means, col. 3, lines 27-29).

The method of operating the driving circuit in a TFT-EL display is explained in the following descriptions (col. 3, lines 19-20).

The discharging signal on the n-th row of discharge lines goes low just a moment before time t1 and goes high just a moment after time t2 to close the transistor T2 between time t1 and t2, while the charging step is in progress. When the n-th row of discharge line maintains a high voltage level between time t2 and t3, the transistor T2 is switched on and the n-th row of OLED in a TFT-EL display is driven by the corresponding capacitor of the n-th row of driving circuit and therefore the n-th row of OLEDs luminance according to the data signal kept on the corresponding capacitor (col. 3, lines 40-50).

7. As to claim 23, Ting teaches an image display device comprising at least one pixel including a capacitor "C" (a memory means, fig. 1),

[recited in lines 6-7 of claim 22]

a driving circuit includes a data line (a pixel drive voltage generation circuit, col. 2, lines 49-50).

[recited in lines 8-9 of claim 22]

row of driving circuits (voltage supplying means, col. 3, lines 56-58).

[recited in lines 10-13 of claim 22]

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As the transistor T2 is switched on, the OLED is driven by the capacitor C through the channel of the transistor T2 (a pixel turn-on period decision means, col. 3, lines 27-29).

The method of operating the driving circuit in a TFT-EL display is explained in the following descriptions (col. 3, lines 19-20).

The discharging signal on the n-th row of discharge lines goes low just a moment before time t1 and goes high just a moment after time t2 to close the transistor T2 between time t1 and t2, while the charging step is in progress. When the n-th row of discharge line maintains a high voltage level between time t2 and t3, the transistor T2 is switched on and the n-th row of OLED in a TFT-EL display is driven by the corresponding capacitor of the n-th row of driving circuit and therefore the n-th row of OLEDs luminance according to the data signal kept on the corresponding capacitor (col. 3, lines 40-50).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ting in view of Kane (US 6,229,508).

As to claims 24, 25, Ting teaches all of the claimed limitations, except for said pixel drive generation means or circuit generates a triangular wave pixel drive voltage.

Kane teaches "the data line is driven by a data driver that uses the chopped ramp technique to set the voltage on the data line" (fig. 10, col. 10, lines 25-26).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide "the chopped ramp technique" taught by Kane for Ting's data line because this would improve brightness uniformity by reducing current nonuniformities in a light emitting diode of the pixel structures as taught by Kane (abstract).

***Allowable Subject Matter***

10. Claims 1-21 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter: the reason for allowance indicated in previous office action filed 12/5/2005.

***Response to Arguments***

12. Applicant's arguments filed 05/24/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that claims 22 and 23 recite "a pixel drive voltage generation means to generate a pixel drive voltage, and a voltage supplying means for supplying the pixel drive voltage to the memory means." This argument is not persuasive because Ting's invention teaches a driving circuit includes a data line (a pixel drive voltage generation circuit, col. 2, lines 49-50), and row of driving circuits (voltage supplying means, col. 3, lines 56-58). Examiner clarifies the teaching of the Ting's invention a driving circuit includes a data line (col. 2, lines 49-50), and row of driving circuits (col. 3, lines 56-58) meet the claimed limitation a pixel drive voltage

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generation circuit and voltage supplying means. For example, the column driver and the row driver (not show in figure) inherently drive the data-line (fig. 1) and the scan-line (fig. 1).

In response to applicant's argument that claims 24, 25 recite "said pixel drive voltage generation means or circuit generates a triangular wave pixel drive voltage." This argument is not persuasive because Kane teaches "the data line is driven by a data driver that uses the chopped ramp technique to the set the voltage on the data line" (fig. 10, col. 10, lines 25-26).

For these reasons, the rejections based on Ting and Kane have been maintained.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



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Kevin M. Nguyen  
Patent Examiner  
Art Unit 2674

KN  
July 29, 2004

  
**XIAO WU**  
**PRIMARY EXAMINER**